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Ornan A. Gerstel

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FITZPATRICK CELLA HARPER & SCINTO  
30 ROCKEFELLER PLAZA  
NEW YORK, NY 10112

EXAMINER

BELLO, AGUSTIN

ART UNIT

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2613

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DELIVERY MODE

03/17/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |                                       |  |
|------------------------------|--------------------------------------|---------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>09/886,153 | <b>Applicant(s)</b><br>GERSTEL ET AL. |  |
|                              | <b>Examiner</b><br>Agustin Bello     | <b>Art Unit</b><br>2613               |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 January 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17, 51-58 and 72-101 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-9 and 53 is/are allowed.
- 6) ☒ Claim(s) 1-4, 10-17, 51, 52, 54-58 and 72-101 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-4, 13-14, 17, 51-52, 56, 72-85, 87, 91, 95, and 99 are rejected under 35 U.S.C. 102(e) as being anticipated by Sato (U.S. Patent No. 6,477,288).

Regarding claims 1, 51, 72-76, 84, Sato teaches a communication network, comprising: a plurality of nodes (as described throughout the specification), adjacent ones of said nodes being coupled together through first optical fibers (e.g. each segment 1A between nodes in Figure 16) that form first communication paths and second optical fibers (e.g. each segment 2B between nodes in Figure 16) that form second communication paths (e.g. both working and protection path shown in Figure 5A), each node comprising: a plurality of switches (reference numeral 13-14, 16-17 Figure 5A), including a first switch (reference numeral 13 in Figure 5A) and a second switch (reference numeral 14 in Figure 5A), each having at least one first terminal (circles seen in Figure 5A), at least one second terminal (circles seen in Figure 5A), at least one third terminal (circles seen in Figure 5A), and at least one fourth terminal (circles seen in Figure 5A), wherein the first terminal (penultimate circle from top of switch 13 in Figure 5A) and the second terminal (uppermost circle from top of switch 13 in Figure 5A) of said first switch are coupled through first plural optical fibers forming first communication paths (reference numeral 5 in Figure 5A

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with fiber 5 forming a loop as in Figure 16 using a plurality of fiber segments that form the first communication paths) and second plural optical fibers forming second communication paths (reference numeral 7 in Figure 5A with fiber 7 forming a loop as in Figure 16 using a plurality of fiber segments that form the second communication paths), respectively, to a first, adjacent one of the nodes (e.g. nodes to the left of the node of Figure 5A), the first terminal (penultimate circle from top of switch 14 in Figure 5A) and the second terminal (uppermost circle from top of switch 14 in Figure 5A) of said second switch (reference numeral 14 in Figure 5A) are coupled through plural other first optical fibers forming other first communication paths (rightmost reference numeral 5 in Figure 5A with fiber 5 forming a loop as in Figure 16 using a plurality of fiber segments that form the first communication paths) and plural other second optical fibers forming other second communication paths (rightmost reference numeral 7 in Figure 5A with fiber 7 forming a loop as in Figure 16 using a plurality of fiber segments that form the second communication paths), respectively, to a second, adjacent one of the nodes (e.g. nodes to the right of the node of Figure 5A), and the third terminal (uppermost and rightmost circle of switch 13 in Figure 5A) of said first switch is coupled to the third terminal of said second switch (uppermost and leftmost circle of switch 14 in Figure 5A) through at least one third communication path (reference numeral 30 in Figure 5A); at least one multiplexing/demultiplexing device (reference numeral 11 in Figure 5A) bidirectionally coupled to each of an external communication node (e.g. the add/drop client inherent in Figure 5A) and the fourth terminal of each first (reference numeral 13 in Figure 5A) and second switch (reference numeral 14 in Figure 5A), said at least one multiplexing/demultiplexing device for forwarding signals being communicated between the fourth terminals of said first and second

switches (as seen in Figure 5A) and for forwarding signals being communicated between the external communication node and the fourth terminal of respective ones of said first and second switches (as seen in Figure 5A); and at least one controller (reference numeral 24 in Figure 5A) coupled to said first and second switches, said at least one controller being responsive to applied input information (e.g. from reference numeral 19, 21 in Figure 5A) for controlling at least one of said first and second switches to cause that at least one switch to selectively couple at least one of (a) the first and second adjacent nodes together by way of at least one of the first and second communication paths coupled to that at least one switch, and (b) the external communication node and at least one of the first and second, adjacent nodes by way of at least one of the first and second communication paths coupled to that at least one switch, wherein each first communication path (reference numeral 5 in Figure 5A) is a working path and each second communication path (reference numeral 7 in Figure 5A) is a protected path.

Regarding claim 2, 87, 91, 95, 99, Sato teaches that each of said first and second switches is a 4X4 optical switch (as indicated by the 4 input 4 output nature of each of the optical switches shown in Figure 5A).

Regarding claims 3, 52, 78, 79, 83, 88, 92, 97, Sato teaches said at least one multiplexing/demultiplexing device is a Wavelength- Division-Multiplexed (WDM) device (column 24 lines 35-40).

Regarding claim 4, Sato teaches that said at least one multiplexing/demultiplexing device includes at least one add/drop multiplexer/demultiplexer (column 7 lines 50-55).

Regarding claims 13, 56, 77, 82, and 85, Sato teaches each node further comprises at least one monitor (column 7 lines 53-59) for detecting the occurrence of a failure in at least one

of said first and second communication paths, and wherein said at least one monitor responds to detecting a failure in that at least one communication path by applying the input information to said at least one controller (reference numeral 24 in Figure 5A).

Regarding claim 14, Sato teaches that said at least one monitor detects the occurrence of a failure in the at least one communication path by detecting the substantial absence of light in that path (e.g. "loss of signal" in column 7 lines 50-59).

Regarding claims 17, 80, 81, Sato teaches that said plurality of nodes are coupled together through said first and second communication paths, and form a loop configuration (Figure 16).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 10-12, 54-55, 86, 89, 90, 93, 94, 96, 98, and 100 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato.

Regarding claims 10-12, 54-55, 86, 96, 98, and 100, Sato teaches fails to specifically teach the plurality of switch configurations claimed. However, Sato does teach that any of number of switch connection configurations could be made in order to provide the required operation of the optical switching node (as noted throughout Sato). Furthermore, Sato teaches that the controller makes logical decisions on the operation of the optical switches based on failure information received or the detection of the loss of signal (reference numeral 19-22 in

Figure 5A). Moreover, it is apparent from Figure 5A that the “loop-back” switch function is well known in the art and supported by the system of Sato. One skilled in the art would clearly have recognized from the disclosure of Sato that a variety of switching configurations would have been possible including those claimed by the applicant. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to employ the claimed switch configurations in the system of Sato.

Regarding claims 89, 90, 93, and 94, Sato differs from the claimed invention in that Sato fails to specifically teach the use of amplifiers and attenuators as claimed. However, Official Notice is given that such elements are well known in the art and readily available. One skilled in the art would have been motivated to employ these elements in order to level of signals being used in the system. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to employ amplifiers and attenuators as claimed.

5. Claims 15, 16, 57, 58 and 101 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato in view of Sharma (U.S. Patent No. 5,986,783).

Regarding claims 15, 16, 57, 58, and 101, Sato teaches said at least one controller is coupled to at least one of the other nodes of the communication network through at least one of said first and second communication paths (column 15 lines 62-67), and wherein said at least one controller is responsive to the input information being applied thereto by the at least one monitor, but differs from the claimed invention in that Sato fails to specifically teach notifying the at least one other node of the detected failure by way of that at least one communication path. However, Sharma teaches that this is well known in the art (column 16 lines 1-3). One skilled in the art would have been motivated to notify the at least one other node of the detected failure by way of

that at least one communication path in order to allow the adjacent nodes to reconfigure themselves accordingly (column 16 lines 1-3 of Sharma).

***Allowable Subject Matter***

6. Claims 5-9 and 53 are allowed.

***Response to Arguments***

7. Applicant's arguments filed 09/21/07 have been fully considered but they are not persuasive. As noted in the office action, Sato teaches the plural first optical fibers that form the first communication path in that the first communication path is actually composed of a plurality of first fiber segment (e.g. the fibers between each node) that when taken as a ring anticipates the claimed plural first optical fibers forming first communication paths.

In other words, when looking at Figure 16 and keeping in mind the node structure shown in Figure 5A, each of the nodes N in Figure 16 are coupled to one another via a plurality of optical fibers. More specifically, each node "N" in Figure 16 having the structure shown in Figure 5A has within itself at least four first optical fibers, i.e. fiber 5 at the clockwise input to switch 13, fiber 26 at the clockwise output from switch 13, fiber 28 at the clockwise input to switch 14, and fiber 5 at the clockwise output to switch 14, that form first communication paths. Expanding this interpretation for every node shown in Figure 16, it becomes apparent that each node is coupled to every other node via at least four communication paths, i.e. two clockwise and two counter-clockwise paths, each of which is comprised of a plurality of fibers connected together at switching elements within the nodes as shown in Figure 5A, thus resulting in plural first optical fibers, plural other first optical fibers, plural second optical fibers, and plural other second optical fibers since each node is connected to each first and second communication path



once the input to the node and once at the output of the node in a ring configuration. Therefore, the examiner maintains that the plurality of first optical fibers and plurality of second optical fibers are clearly taught by Sato.

Furthermore, applicant's argument that the examiner appears to have interpreted each single fiber of Sato as a plurality of fiber elements is moot since this is not the position taken by the examiner. Rather, the examiner contends that each single path or loop in Sato is actually comprised of a plurality of optical fibers.

### ***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Agustin Bello whose telephone number is (571) 272-3026. The examiner can normally be reached on M-F 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Agustin Bello/  
Primary Examiner, Art Unit 2613